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ABSTRACT

The theme of this colloquy was selected as a response to the concern often expressed by teachers to create more effective communications among school systems in order to facilitate links among schools. Forming links among schools in different countries throughout the world has made a notable contribution to the enrichment of the curriculum and to the development of international awareness and understanding among pupils, their parents, and their teachers. Information technology is the great enabler. It provides for those who have access to it an extension of their powers of perception, comprehension, analysis, thought, concentration, and articulation through a range of activities. The intellectual amplification it provides, when properly exploited in education, can deliver the self-confidence and openness of mind that is indispensable for learning and development. This report discusses this theme, traces the preparation for the colloquy, summarizes the program presentations and activities, and presents the recommendations formed by the colloquy working groups. Appendices contain the reports of the working groups and a list of the participants. (JB)

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Colloquy on computerised school links

Using the new technologies to create links between schools throughout the world

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COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

12 May 1989

CDCC (89) 10

Colloquy on computerised school links

Using the new technologies to create links between schools throughout the world

Crossmead Conference Centre
Exeter, Devon, United Kingdom

17-20 October 1988

Report by
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Council for Cultural Co-operation
School Education Division

Strasbourg 1989

1. Introduction

1.1 It would not be inappropriate to begin this report by quoting the preamble to the recommendations by one of the working groups of the colloquy in their report entitled "Towards a European policy position in educational technology and telecommunications". Although referring to the whole field of the new technologies their definition of the opportunities and the problems which face education today provides an articulately painted backcloth against which the various findings of the colloquy can be described.

1.2 "Information technology is the great enabler. It provides for those who have access to it an extension of their powers of perception, comprehension, analysis, thought, concentration and articulation through a range of activities which include: writing, visual images, mathematics, music, physical movement, sensing the environment, simulation and communication. The intellectual amplification it provides, when properly exploited in education, can deliver the self confidence and openness of mind which is indispensable for learning and development.

1.3 "The progress of information technology is inevitable: world leaders cannot afford to ignore it or its consequences since the power it provides places at a disadvantage those denied access to it. It not only enables those who use it to access and process information more quickly, accurately and fairly: it also allows them to undertake tasks which were previously impossible.

1.4 "The microcomputer is unique in its versatility as a tool of learning: its exploitation is part of the logical technological progress of mankind. Its implications for the development of children in a country must be recognised. It must be embraced in the education which every child receives if that child is to develop his or her own full potential.

1.5 "Society is placing ever-increasing intellectual demands on its contributing members. The demographic changes resulting from changing birth rates and increased longevity, coupled with increasing demand for skilled manpower, asks for better competence from all school leavers. The power of information technology to promote children's development is indisputable, and is apparent in the many curriculum projects currently being undertaken in all sectors of education. World governments concerned about the future should recognise this fact, and plan accordingly.

1.6 "School provision ought not only to include buildings, materials, books and trained staff: it might also include microcomputers, associated equipment and the necessary support staffing. Information technology should form a part of normal education budgets. Ministries or departments of education will from now on be faced with the task of dealing with it as a normal, integrated part of the school curriculum, permeating every subject area, or face the consequences. Unless future adults have confidence in using information technology, they will be reduced to a state of intellectual serfdom".

2. The theme of the colloquy

2.1 The theme of the colloquy was selected as a response to the concern often expressed by teachers to create more effective communications between school systems in order to facilitate links between schools. Teachers have traditionally recognised the importance of opening windows on the world beyond the school gate so as to give pupils the social awareness and skills with which to grow up and cope in society. Intercultural education is part of social education and many schools now introduce their pupils from an early age to the way of life of other cultures whether they be within the same community in a multicultural society or abroad.

2.2 Forming links between schools in different countries throughout the world has made a notable contribution to the enrichment of the curriculum and to the development of international awareness and understanding among pupils, their parents and their teachers. Penpalling is perhaps the most ancient activity practised within school links and initial exchange of letters has very often provided the starting point for a life long friendship.

2.3 The framework of the link has provided opportunities for joint projects in a number of subjects where pupils work on an agreed theme over a period of time and exchange the results of their work in order to acquire a broader view and greater tolerance of different points of view. A link between two schools can also provide the right conditions for visits and exchanges for pupils and the in-service training of teachers through study visits and post-to-post exchanges.

2.4 Because of the growing interest in schools to create contacts with a number of different cultures and to develop projects beyond the simple objectives of learning another language, there are now a growing number of examples of schools setting up networks in some cases spread right across the globe. It is because the new technologies have entered the scene that such worldwide networks of schools have been made possible.

3. Preparation of the colloquy

3.1 The role of the new technologies as potentially powerful aids in promoting international understanding was recognised at the Council of Europe Symposium in Haykko, Finland in September 1986 on "The world in the European classroom". At the conclusion of this symposium it was proposed that a conference be held to take stock of the current efforts in schools in member states to set up links with schools in other countries particularly those based on the new technologies.

3.2 At their meeting of 10-13 February 1987 the Council for Cultural Co-operation (CDCC) of the Council of Europe adopted a proposal to organise a colloquy along the lines described above and more particularly on how the new technologies could be used to create international contacts.

3.3 Preparatory meetings were held in Strasbourg in July and December 1987 and the main lines of the colloquy were agreed. It was felt important from the outset that a questionnaire be sent well in advance of the colloquy to member states to assess current experience

in this field and to discover examples of good practice which could be made available at the colloquy in the form of case studies or contributions by speakers.

3.4 It was also considered important that the colloquy should take place at a venue where participants would be in a position to visit schools which had working links of this kind with schools in other countries.

3.5 Devon in the United Kingdom was chosen because of its known policy of integrating information technology within the school curriculum and more particularly because of its international links with Tasmania, Canada, Japan and France. The DATEM project (Devon and Tasmanian Electronic Mail) has developed links between 10 Devon primary schools with equivalent schools in Tasmania through which up to 500 children are exchanging written messages almost instantaneously to the other side of the world. Some 135 schools, colleges and resource services regularly use mailbox facilities for routine communications and a Devon Satellite in Education Group has been set up to co-ordinate activities in this field, particularly in view of the launching in 1989 of the Olympus Satellite for which Devon is preparing educational programmes.

3.6 A questionnaire as referred to above on educational links between schools and the role of the new technologies was sent out to all member states by the School Education Division of the Council of Europe. Contained within the questionnaire was a call for case studies and it was intended that the information received would form the basis of a discussion paper to be sent out to participants in advance of the colloquy. There was also a request to member states to provide advance notice of the questions they wished to be raised at the colloquy and which would form the basis of discussion for the working groups.

3.7 Further preparatory meetings were held in Strasbourg (July 1988) and on a number of occasions at the Crossmead Centre in Exeter where the colloquy was to be held.

4. Analysis of current situation in member states

4.1 Only ten member states (1) replied to the questionnaire referred to above of which only four (2) were able to give detailed information on developments in this field. As contributions by speakers and participants at the colloquy proved in their descriptions of projects with which they are involved, this disappointing response to the questionnaire was not to be interpreted as a lack of activity in this field.

4.2 It did indicate however that in most member states developments in the educational uses of the new technologies are taking place at an increasing rate of progress at a grass roots level. Education

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(1) Belgium, Denmark, Greece, Ireland, Italy, Malta, Netherlands, Norway, Sweden, Turkey.

(2) Denmark, Ireland, Netherlands, Sweden.

departments at a national level have not always been able to keep up with what is happening in schools in this field and information held centrally is not easily accessible.

4.3 Replies to the questionnaire revealed nevertheless that there is considerable interest in member states for some form of international co-operation in this field, particularly in order to remove some of the technical barriers deriving from the incompatibility of certain systems. It is this factor more than any other that seems to decide where electronic links are established which has led for example to the anomaly that it is easier for a United Kingdom school to link with an Australian school than with a French one.

4.4 As has been stated no comprehensive data is yet available on the use of electronic mail and other ways of linking schools. A picture of a great patchwork of different projects emerged during the colloquy to add to the information obtained from the questionnaire. All member states present reported some activity in this field but all reiterated the need for more co-ordination at an international level.

4.5 Among the projects reported were examples of electronic mail linking primary and secondary schools, teacher training institutions, universities and schools for the deaf. There is no limit to the number of subjects in the curriculum that can be enriched through links of this kind although systems involving language learning are among the more solidly established and structured. There are also no restrictions on geographical distance with a number of examples of networks linking schools in two or more continents.

4.6 It is not the purpose of this report to attempt to draw up an anthology of the developments referred to above but the following brief descriptions of projects will give some indication of the range of interests which are served by the new technologies in this particular field of linking schools and other educational establishments.

4.7 **Portugal** - The MINERVA Project was created in Portugal in November 1985 with the approval of the Portuguese Ministry of Education. Its principal aims are to support the introduction of new information technologies into educational practice and the organisation of the training of teachers in their use. Some 237 schools in Portugal from primary to special education are covered by the project which is based on a network of 10 universities each with its own approach to the use of the new information technologies. An important area of the work of MINERVA has been the setting up of school networks using electronic mail.

4.8 **Republic of Ireland** - The National Information Technology in Education Centre is being set up in Dublin to support schools in the Republic of Ireland on matters relating to the use of the new technologies by schools in the Republic of Ireland. Special emphasis will be placed on communications and an electronic mail system is in operation.

4.9 **Sweden** - A data communication project has been developed in the county of Kalmar, Sweden with the collaboration of the Swedish Education Department, Swedish Telecom and the university college of Kalmar. One of the uses of the network is to set up links between

Swedish and British schools using electronic mail which provides opportunities for a number of activities including pen-palling and the organisation of newspaper days.

4.10 **United Kingdom** - Several British schools have working links with schools in the USA, Canada, France, Federal Republic of Germany, Australia and Singapore. Assistance has been given to this development by British local authorities, teacher training institutions and central agencies on computer education.

4.11 **United Kingdom - Network Inter-Action** is a pilot communications project based in London using computers which will network some 1,500 youth clubs and schools around the United Kingdom. The aim is to provide young people with organisational and social skills by using communications technology and the opportunity to access databases on topics of specific relevance to youth. It is hoped that the network will link with global learning interaction involving schools and youth clubs throughout the world.

4.12 **European Comparative Local and European Studies (ECLES)** - 10 schools in Copenhagen, Denmark and Stockport, United Kingdom have formed a network carrying out local studies in a joint environmental studies project. Teacher training institutions in both countries are also involved and the project is linked to the PLUTO project described below.

4.13 **Project to link universities and teaching organisations (PLUTO)** - The project has been set up by the Centre for Information Technology and Education at Manchester Polytechnic in collaboration with the IBM International Education Centre in Belgium. The PLUTO project proposes to link teacher training organisations in Europe using local and international computer conferencing networks and through these to enhance understanding in the teacher training community of the added value which communications technology can bring to the classroom, and to develop in trainers and teachers skills required to exploit the educational potential of these technologies. Partners in this operation include teacher training institutions in Denmark, Portugal and the United Kingdom.

4.14 **Canada - Réseau d'ateliers pédagogiques pilote international** (RAPPI), knovn as an electronic open houe is the first of an ongoing series of international projects which link approximately 75 schools in Canada, and Western Europe in an electronic netvork. British, French and Italian schools are among European schools taking part in the network and communication is in a variety of languages. The purpose of the project is to allov pupils to find out directly from each other what it is like to live in their partner schools' culture and community. Topics for discussion incude Canadian/European cultural comparison, co-operative story telling, AIDS, Libya, Canadian humour and the Chernobyl incident.

5. The programme of the colloquy

5.1 Speakers

5.1.1 The colloquy was chaired on behalf of the United Kingdom by Christopher Schenk, Her Majesty's Inspector of Schools, who stressed the importance of ensuring that discussion focused on how the new

technologies can improve the work of education over more traditional methods. Participants were invited to examine very closely the merits of facilities such as electronic mail and to frankly admit when the time and expense involved in their use outweighs their educational benefits.

5.1.2 **Tom Stonier**, Professor of Science and Society at Bradford University gave the keynote lecture on the opening evening and provided participants with a fascinating and wittily portrayed vision of a future where the computer has a central role in society. The computer for him is the most powerful pedagogic device "since the invention of grandmothers". Grandmothers, he explained, were humanity's first information storage and retrieval system. Grandmothers remembered that very cold winter 50 years ago besides remembering what their own grandmothers told them.

5.1.3 Professor Stonier suggested that by early in the next century the computer will become the most important single learning experience for acquiring organised knowledge. He forecast that education would become the most important industry in the 21st century and the largest employer. Schools and other educational establishments will need to educate for a changing future in a society where the most important input into productive systems will be know-how. The computer will have a central role as a valuable aid to thinking, to organising and to being creative. Education for an information society will concentrate on producing a creative work force, adaptable, entrepreneurial and interdisciplinary where the computer is central to the learning process helping to solve the problems of this planet.

5.1.4 **Giulia Podestà**, Head of the School Education Division of the Council of Europe, in her welcoming address, described the work of the Council for Cultural Co-operation (CDCC) and stressed that the originality of this body lay in the fact that the CDCC attains the objectives of the European Cultural Convention by focusing its action on synergy between education and culture. She then referred to workshops and symposia at Frascati (1982), Edinburgh (1984) and Eindhoven (1987), where the subject of computers in education was under discussion. At the workshop held at Frascati it was felt by participants that by 1995 almost half of all jobs would be influenced by the new technologies.

5.1.5 As stressed on many occasions (symposia, case studies), in particular within the framework of CDCC's Project No. 8 on "Innovation in primary education", the underlying philosophy is to ensure that technological changes are being initiated as part of a democratic process. The importance of the initial and in-service training of teachers in this field was emphasised at the 15th session of the Standing Conference of European Ministers of Education held in Helsinki in 1987; the next session to be held in Istanbul in 1989 being focused on the theme "The information society - a challenge for education policies".

5.1.6 **Dr. Roger Austin**, Director, European Studies Project, Northern Ireland described the two programmes in which he is involved, one for 11-15 year olds and the other for the 16-18 age group.

5.1.7 The project for the younger age group is based on links between schools in Northern Ireland, England and the Republic of Ireland. The 2,000 pupils in the 18 schools concerned are linked on an individual or group basis and central to their communications is the use of computers and electronic mail. The aims of the project are:

- to allow pupils in the three areas to undertake joint investigation of historical and geographical topics;

- to provide opportunities for pupils to see the perspectives of other pupils through the collaborative analysis of historical/environmental topics;

- to encourage pupils to develop information skills which enable a personal independence towards learning, using a variety of media to facilitate communication between schools;

- to help pupils to understand relationships between Ireland and Great Britain within the context of Europe.

5.1.8 The 16-18 year project involves two schools in Northern Ireland, two in the Republic of Ireland, one in England and four in Belgium. The aims of the project are:

- to give students an enriched experience of a European dimension in the contemporary world;

- to enable students to gain a better understanding of the perspectives of their peers in other European countries;

- to develop skills in the use of information technology;

- to provide opportunities for personal and social development through the experience of residential contact;

- to promote the use of foreign languages.

5.1.9 It is clear that programmes such as this increase understanding between schools in different communities besides enriching the learning of a number of subjects. Dr. Austin referred to the potential of using satellite communications in the future in order to allow schools to exchange video as well as digital information. He referred to the beneficial influence of electronic mail and the motivation of pupils but underlined the need for the correct technical conditions without which it is time-consuming and discouraging.

5.1.10 **Francis Debyser**, Directeur-Adjoint at the Centre International d'Etudes Pédagogiques in Sèvres, outlined the use of telematics in creating exchanges and joint projects between schools. He referred in particular to PASSEPORT. Networks have been created between schools in Sèvres, Madrid, Naples and Lisbon and debates and other activities have taken place using teleconferencing and other means to the considerable benefit of the young participants.

5.1.11 There have been bilingual teleconferences between German pupils studying French at a secondary school in Lower Saxony and French pupils studying German in Rouen. A connection has also been established between pupils in Sèvres and a group of pupils in Singapore.

5.1.12 In December 1987 the Franco-Italian "FORTUNAT" connection enabled 300 Italian and French pupils to write in six days (six one-and-a-half hour teleconferences) thereby creating a collective intercultural telematic novel ("Les carnets de voyage de Fortunat"). Subsequent workshop discussion of the teleconference texts has given rise to a publication of outstanding quality.

5.1.13 **Monsieur Debyser** underlined the importance of adequate preparation and the need to train teachers in the use of these new technologies. Without this the sometimes remarkable benefits to language learning and to the intercultural awareness of the pupil will not be achieved.

5.1.14 **Wolfgang Meyer** described the use of the new communications technology in the teaching of foreign languages in schools in Lower Saxony in the Federal Republic of Germany. One project involves the compiling of a newspaper in English making use of a data base accessed through electronic mail. Such an exercise brings alive the learning and practising of English.

5.1.15 Some 30 schools in the Federal Republic have been given the free use of TELEBOX the German DIALCOM mailbox. It is too early to complete an evaluation but certain assessments can be made such as the need to set up more international co-ordinates so that partners can be more easily located abroad.

5.1.16 **Bertold Weidman** described how language teaching has been enriched in a school where he taught in North Wales and the Brierley Language Centre in Lincolnshire, England where he is now teaching. The British and German electronic mailbox systems are technically compatible and a rich programme of language learning exchanges has been set up.

5.1.17 Activities however have not been restricted to languages and schools in both countries have carried out, for example, the joint study of a play by Shakespeare. He has also taken part in discussions on curriculum development with teachers in other schools in the area similarly equipped with electronic mail.

5.2 Visits to schools

5.2.1 Central to the activities in the programme of the colloquy were the visits to local schools. Participants were invited to spend an afternoon in one of seven schools where they were able to observe work involving the use of the new technologies.

5.2.2 **The Lipsom School**, Plymouth is a 11-18 comprehensive school serving the inner city area and was built in 1984 to replace a number of smaller secondary modern and grammar schools. The school has an internal computer network and electronic mailbox facilities. The intention of the school is to make the use of information technology an integral part of every pupil's learning experience.

5.2.3 **St. Thomas High School**, Exeter is a 12-16 comprehensive school which also encourages the use of information technology throughout the curriculum. The school has many specialist facilities such as a 16 station computer suite, a television studio, a number of satellite resource areas and electronic mail.

5.2.4 **Woodbury Salterton Primary School** has 33 pupils aged between 5 and 11 and two teachers. The building is 140 years old and serves a small village community. The school has a computerised link with a school in Tasmania, Australia and with seven local schools.

5.2.5 **Rydon County Primary School**, Kingsteignton was built in 1987 for 280 pupils. The school uses word processing facilities for the teaching of keyboard skills, creative writing and the development of confidence in the use of the new technologies. The school also has electronic mail for communicating with other schools in the area.

5.2.6 **Pennycross Primary School**, Plymouth serves a relatively disadvantaged area three miles from the city centre. Electronic mail provides the school with an opportunity to carry out joint projects with their linked school in Tasmania and themes have included the study of wildlife and local and national news.

5.2.7 **Dartington Church of England Primary School** is a regular user of electronic mail and has links with schools abroad. The need to create packages describing issues of culture and situation has involved all curricular areas from language to humanities and mathematics.

5.2.8 **Okehampton Primary School** runs a newspaper replicating the workings of a provincial newspaper. The school also organises a regular programme of activities with its linked school in Tasmania through the use of electronic mail.

5.3 Newspapers

5.3.1 During the course of the colloquy pupils from local schools produced two newspapers "The Colloquy Echo" (pupils from two primary schools) and "The Crossmead Times" (pupils from a local secondary school). Both newspapers contained news from many countries throughout the world obtained from the databases accessed from the conference centre as well as interviews with participants at the colloquy.

5.3.2 The presence of the young people, busy producing their newspapers, was a constant reminder to participants of the skills young people now have in manipulating the new technologies and, through them, in finding things out for themselves.

5.4 Working groups

5.4.1 An essential characteristic of the programme was the importance attached to discussions held in the four working groups which contained, as far as it was possible, a cross section of participants from different member states.

5.4.2 The groups met on four occasions during the colloquy and produced reports (1) using as a guide the following questions:

- What are the educational benefits of setting up links between schools whether through traditional methods or using the new technologies?

- What examples are there of the successful use of the new technologies in linking schools? What particular aspects of the curriculum can be enriched by these links?

- What examples are there of failures in attempts to use the new technologies for linking schools? What are the problems of compatibility arising from the use of different systems?

- Which sectors of education eg primary, lower secondary, upper secondary are best suited for links using the new technologies?

- What are the organisational implications for schools of setting up links of this kind?

- How much can be left to individual pupils and how much should be teacher controlled in using electronic links and what are the difficulties in sustaining a link between schools?

- What sort of information should be collected and stored in central data bases for use by teachers and what sort of information would be of general interest to young people?

- In setting up and maintaining electronic links what are the roles of international agencies, ministries and central agencies, regional and local education authorities and schools?

- What are the financial implications of setting up electronic links?

- What are the responsibilities of the suppliers of the new technologies particularly where the cost to education is concerned and the question of technical compatibility?

- What are the implications for teacher education of the introduction of the new technologies?

6. Recommendations

6.1 The central problem identified by all the working groups and reiterated in plenary sessions was the lack of co-ordination in a field of endeavour which can only function properly, particularly at an international level, through close co-operation and with a plentiful supply of information.

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(1) The text of these reports appears in Appendix 1 hereafter.

6.2 Giulia Podestà, Head of the School Education Division of the Council of Europe, in her address referred to above quoted Professor Wragg, Director of the School of Education at Exeter University:

> "Although no committee would ever have composed Beethoven's Fifth Symphony, it is also unlikely that any individual could have sent a rocket to the moon. A great deal of human achievement will in future be the result of teamwork."

The need for teamwork in ensuring that the new technologies can be fully exploited for the role in linking schools throughout the world is crucial and underlay a number of the recommendations for future action.

6.3 In discussion on the way to achieve better co-ordination in the educational application of the new technologies at an international level it was hoped that the initiative taken by the Council of Europe to organise the colloquy would lead to the formation of some coherent strategies by the Council and the Commission of the European Communities. Because of the global implications of the new communication technologies there would also be a need for co-operation with Unesco and other international bodies.

6.4 Frustration was expressed by some participants that there was not enough sharing of information and expertise by some of the appropriate international organisations which led to duplication of efforts and confusion. The disappointing response to the questionnaire sent out in advance of the colloquy revealed a major lack of co-ordination and central information in some member states which suggested to some participants that the relevant national bodies had yet to recognise the important role of the new technologies in education.

6.5 The presence at the colloquy of a number of suppliers of the new technologies was much appreciated and the display of their products provided participants with an opportunity to learn more about progress being made in several areas. Their presence also provided an opportunity for participants to underline the importance of the dialogue between the commercial or state run telecommunications systems and education.

6.6 A summary of the recommendations from working groups as well as a letter to the Council of Europe were presented at the final plenary session. These texts are reproduced below.

Recommendations

A. Addressed to international agencies

Preamble

The international agency thought most appropriate for ensuring the co-ordination and monitoring of the use of the new information technologies for educational purposes is the sponsoring organisation of the colloquy, the Council of Europe. Working groups expressed their gratitude to the Council for providing a framework for discussion of matters which are crucial to the future of education in Europe.

Most recommendations at an international level are therefore addressed to the Council of Europe and thereby to the CDCC. It is accepted, however, particularly where funding and the organisation of networks are concerned, that collaboration should be sought with the Commission of the European Communities and other appropriate international agencies.

It is hoped that recommendations will be based on the principle that all European citizens have the right of access to computer knowledge and to information for educational purposes through the use of telecommunications and on-line information systems in education.

Recommendations

1. That a structure be created by the Council of Europe to initiate, co-ordinate and maintain electronic links between educational institutions in member states. An international working group or task force including representatives from education, information technologies and industry should be set up immediately to devise plans for such a structure and to set in motion the following developments:

a. the setting up of a network between national centres which already exist or which will be created (see B.1 below);

b. the analysis and evaluation of existing network services and the dissemination of information on opportunities in the field and associated problems;

c. the production of a vademecum with information on the use of the nev technologies in support of the teaching and learning of various subjects and examples of good practice drawn from different levels of education and training.

2. That a further international conference or workshop be organised to discuss the classroom application and strategies for the use of telecommunications in intercultural education. Such a conference should be held under the sponsorship of the Council of Europe through the CDCC, possibly with the collaboration of the Commission of the European Communities and hosted by a member state.

3. That multiplier pilot projects with objectives which are seen to be to the benefit of several member states should be grant-aided by the Council of Europe in collaboration with the Commission of the European Communities.

4. That all international agencies working in the field of education, but particularly the Council of Europe through the CDCC, should lobby the suppliers of telecommunications in order to achieve reduced rates for educational purposes.

B. Addressed to member states

Preamble

As current practice has already shown links of the kind under discussion need not, and indeed should not, be restricted to any particular region or group of countries. Membership of the colloquy

covers a wide area of the globe and recommendations under this heading are addressed to all countries interested in the educational use of the new technologies.

Recommendations

1. That a national centre be designated or created to support and monitor the development of links and to co-operate with centres in other states in the setting up of networks (see A.1 above).

2. That initial and in-service training for teachers include the acquisition of the necessary skills in the use of the new information technologies whatever the subject discipline of the teacher and awareness of how this technology can assist with development education and intercultural learning.

C. Addressed to suppliers of telecommunications

Preamble

The benefits to education of the continuing advances made by the new technologies can only be fully exploited through the closest possible collaboration with the suppliers of the technology in question. There have been examples already in countries represented at the colloquy of generous concessions made by suppliers to education authorities and institutions but such examples are rare.

Recommendations

1. That a standard for interconnection of these networks be fully developed in order that incompatibilities between systems be eradicated and that all users should have access to data bases and other services.

2. That the technology used for telecommunications should be easy to use.

3. That there should be an international agreement ensuring specially reduced rates for services to education provided by this new technology, and that equitable right of access be assured for all users through a distance-independent pricing structure.

LETTER TO THE COUNCIL OF EUROPE

It emerges from the Colloquy on Computerised School Links which took place at the Crossmead Conference Centre, Exeter, Devon, in the United Kingdom during October 1988, that there are many technical barriers to international computer links within Europe.

As a first step towards creating practical links between schools and citizens in the countries of the Council of Europe, we recommend that governments take steps to facilitate gateways between the national telecommunications systems. We hope that this will develop into an international network, linking educational establishments all over the world.

This development would initiate systems which will eventually make possible computer conferencing and database access across borders through the national electronic mail systems.

The aim is to establish cross-links and worldwide mutual understanding.

Yours sincerely,
On behalf of the delegates to the colloquy

Stellan Ranebo
Peter Holbech
Reg Varney

NB: We suggest that the following bodies be contacted in the process of implementing the recommendations:

CEPT - European Conference of Postal and Telecommunication Administrations
CCITT - International Telegraph and Telephone Consultative Committee
The Commission of the European Communities
The Commonwealth Secretariat
The European Parliament

To Delegates:

It is probably a good idea to show this letter "unofficially" to national telecom companies and officials from ministries dealing with education and technology to make these persons aware of the problems.

7. Conclusions

7.1 A remarkable feature of the colloquy was the way in which participants expressed a commitment and sense of urgency to almost every aspect of the subject under discussion. There was a feeling that the colloquy was in a position to do something quite radical about the learning environment of classrooms throughout Europe and perhaps throughout the rest of the world.

7.2 There was also however a sense of frustration that sufficiently high priority had not been given by central authorities in some member states to the co-ordination of efforts in this field. Without such co-ordination and access to information the full educational benefits would not be available, particularly to the smaller educational establishments.

7.3 In spite of this however there was an overriding feeling of optimism and enthusiasm to remove the barriers to progress and get on with the job of setting up a "global electronic village" where learning would be enhanced for all through communication with neighbours near and far.

7.4 The Devon authorities had provided an excellent setting in which this spirit of adventure, discovery and problem solving was nurtured. Whilst the colloquy was taking place youngsters from local schools were in direct contact through electronic mail with peer groups on the other side of the world relaying to them the human interest stories from the colloquy and demonstrating to their elders the skills and attitudes needed for an information age.

7.5 In fact such was the confidence that built up during the course of the colloquy that one was tempted to believe that were the job of setting up a worldwide educational network left to this group with its representatives from most of the countries of Europe and most of the continents of the world there would be no problem left unsolved. It was in this mood that a group of participants, left stranded for three hours on a train which broke down on its way back from Exeter to London, (a reminder that technology can sometimes let you down) decided to meet again and continue the work of the colloquy. (See Appendix A Gateway Group).

7.6 From the many discussions at the colloquy and the examples quoted of good practice in many different member states it would not seem unrealistic to see develop the sort of links between schools which now facilitate international co-operation in the commercial world such as banking and the travel industry.

7.7 In order for schools to develop for their pupils the attitudes and skills needed in tomorrow's society a prerequisite would seem to be the provision of ample opportunity for intercultural learning. A practical step would be for all schools to be linked with one or more schools in other cultures providing a framework for joint projects and pupil mobility as well as the in-service training of teachers through teacher visits and exchanges.

7.8 With the help of electronic mail and other computerised systems one might see develop an international network of schools based on clusters of three to six schools co-operating in the elaboration of

joint studies and the preparation of pupils for life and work in a multicultural and multilingual society (examples of such projects are to be found in Appendix 2, joint projects).

7.9 Alas such heady aspirations were not to be realised in the short life of the colloquy. Participants recognised the limitations they faced in terms of know how and resources and addressed their recommendations to those sectors which could more easily provide the resources and bring about the co-ordination and training needed.

7.10 In the opening statement of the discussion paper provided in advance of the colloquy the General Rapporteur compared the role of the new technologies to taking a photograph from a fast moving train. Before the ink is dry the scene has moved on and what has been recorded is already past history overtaken by yet another advance. As he writes his final paragraph, he is very conscious that even since the colloquy took place the new technologies have advanced to yet another stage of development far beyond the scope of this report and the comprehension of the Rapporteur. The message however is clear from the colloquy at Exeter. Let us not delay any longer in harnessing the power of these amazing technologies in order to establish clear and unambiguous lines of communication between the cultures of this world through the international networking of our schools. We can only do this, however, with the commitment and co-ordinating capacity of international educational organisations and the active and generous collaboration of the suppliers of telecommunications.

A P P E N D I X I

WORKING GROUP 1

A. Aims of school links:

1. To help pupils develop an avareness of local, national and international issues;

2. To help pupils develop a deeper understanding of issues of commonality and conflict;

3. To provide pupils with experiences of practical relevance to their work by communicating directly with other communities and preparing responses for a real audience.

These objectives should help develop sympathetic and caring attitudes amongst pupils and counteract prejudice and intolerance.

B. Methods of linking:

Postage: (letters, tapes, videos, photos, computer disks ...)

Electronic: (phone, fax, videotext E-mail, satellite, teleconferencing ...)

Personal: (teacher and pupil exchange ...)

C. E-Mail:

Advantages: fast, interactive, informal, any number of receivers; immediate access to real people; word processing stage encourages re-drafting; access to databases and other utilities; access to authentic materials; possibility of simulation activities; application for special needs purposes.

Uses:

- Can be subject-specific, eg comparative and/or joint surveys/ activities within R E, geography, history, etc.

- Can be across curriculum: eg newspaper days, integrated study periods, etc.

- Can support own and foreign language skills development.

All such activities should be integrated into the whole learning experience with appropriate preparation and follow up.

Problems (macro and micro!)

Financing; hardware support and compatibility; choice of language for communication; matching age/language competence levels; classroom and curriculum management; lack of central policy and organisation;

lack of familiarity, confidence and training amongst teachers (and teacher trainers!); access limited to certain countries; lack of co-ordination.

D. Current practice

BELGIUM

Four schools are involved in "The European Studies (Ireland and Great Britain) Project" for the 16-18 year old group.

COMMONWEALTH SITUATION (As understood)

1. Some countries are already linked through TTNS eg United Kingdom, Australia, New Zealand, Papua New Guinea, Canada, Cayman Islands.

2. Other areas of the Commonwealth are not yet linked (as far as I am aware) eg Indian sub-continent - East, West and Southern Africa, the Pacific islands and the Caribbean.

GREECE (Note by N CHRISTODOULAKIS)

1. Recently, a plan was initiated to introduce computers in secondary education. All efforts are channelled to provide teachers with computer-training and to supply the essential number of terminals.

2. So far there is no scheme operating between Greek secondary schools and others abroad.

A pilot scheme will be planned to take place next year.

3. There are many universities connected with European and international networks. If compatibility is ensured between university and high school networks in Europe then a pilot school link will be far more easily implemented.

4. At present, a ministerial committee is concerned with future policies on I T and education.

NORWAY (What's happening in Norway - very briefly)

Development programme which has been running for the last four years: Computers in schools.

Communication projects.

- A few experiments, projects that include:

  - Two-way television between schools
  - Videotext project between Sweden and Norway
  - Communication links between project schools

New projects:

Distributed databases: new software is made

Special education: blind
physically handicapped
rehabilitation/aphasia.

UNITED KINGDOM

Various forms of educational links

The most common form of link is the school exchange with another school abroad. Schools may also exchange letters, audio and even videotapes. In a very few cases, schools individually or within a local education authority (LEA) are linked electronically, eg Devon schools with one another locally and with Australia internationally, Brealey Centre/St. George's School with a lycee in Diekirch, Luxembourg.

Further examples: individual E-mail contacts with West German schools and with the Denmark project (specifically from Rotherham), and a Bromley/USA shared project at primary level.

WALES

North Wales - some supported self study for A-level involving teleconferencing.

Individual pilot projects satellites in West Wales; primary/secondary links with local network - high school producing paper for feeder schools, etc.

Many schools provided with modems and links to TTNS.

Primary/secondary links project in South Glamorgan. Work with local micros.

ie. Mainly small scale projects involving individual schools or groups of schools.

E. Recommendations

1. To international agencies:

- to organise and facilitate the establishment of international information and communication networks for educational purposes;

- to ensure that any such networks are easily accessible to countries wishing to join at a later stage;

- to inform themselves fully of current developments in this field, and to disseminate this information to all relevant parties;

- to encourage and support international pilot projects.

2. To national governments/education ministries

- to appoint a co-ordinating agency to monitor, encourage and support these developments;

- to disseminate information within the country and to other national co-ordinating agencies;

- to enable these agencies to set up a structure for partnering schools;

- such agencies to develop guidelines for schools and teacher training in this area.

3. To technical agencies/service suppliers:

to ensure that systems are compatible and easy to use and maintain.

WORKING GROUP 2

Towards a European policy position in educational technology and telecommunications

Preamble

Information technology is the great enabler. It provides for those who have access to it an extension of their powers of perception, comprehension, analysis, thought, concentration and articulation through a range of activities which include:

1. writing
2. visual images
3. mathematics
4. music
5. physical movement
6. sensing the environment
7. simulation
8. communication

The intellectual amplification it provides, when properly exploited in education, can deliver the self confidence and openness of mind which is indispensable for learning and development.

The progress of information technology is inevitable: world leaders cannot afford to ignore it or its consequences since the power it provides places at a disadvantage those denied access to it. It not only enables those who use it to access and process information more quickly, accurately and fairly: it also allows them to undertake tasks which were previously impossible.

The microcomputer is unique in its versatility as a tool of learning: its exploitation is part of the logical technological progress of mankind. Its implications for the development of children in a country must be recognised. It must be embraced in the education which every child receives if that child is to develop his or her own full potential.

The problem

Society is placing ever incresing intellectual demands on its contributing members. The demographic changes resulting from changing birth rates and increased longevity, coupled with increasing demand

for skilled manpower, asks for better competence from all school leavers. The power of information technology to promote children's development is indisputable, and is apparent in the many curriculum projects currently being undertaken in all sectors of education. World governments concerned about the future should recognise this fact, and plan accordingly.

School provision ought not only to include buildings, materials, books and trained staff: it might also include microcomputers, associated equipment and the necessary support staffing. Information technology should form a part of normal education budgets. Ministries or departments of education will from now on be faced with the task of dealing with it as a normal, integrated part of the school curriculum, permeating every subject area, or face the consequences. Unless future adults have confidence in using information technology, they will be reduced to a state of intellectual serfdom.

Recommendations

Recommendation 1 - Policy

That all European citizens have the right of access to computer knowledge and to information for educational purposes through the use of telecommunications networks and on-line information systems.

Action steps

1. That the Council of Europe adopt the above policy position and facilitate its implementation.

2. That the Council of Europe establish a task force to develop the guidelines for a European Information Network System and ensure that structured support be provided for the task to be accomplished.

3. The task force should be composed of individuals representing expertise in education, information technologies, industry and others, as appropriate.

Recommendation 2 - Operation

That all network systems have the capability for communicating with each other.

Action steps

1. That an analysis of existing network services be undertaken to determine those feasible for establishing the European Information Network.

2. That a standard for interconnection of these networks be fully developed in order that electronic mail can be sent and received among systems and all users have access to data bases.

3. That a standard for the human interface to the network be established, and that a primary consideration of this interface be ease of use.

4. That a directory of users on the network be compiled and distributed to users.

5. That a manual be developed to encourage new users to participate.

6. That equitable right of access be assured for all users through a distance-independent pricing structure.

WORKING GROUP 3

Questions put to the group
Questions discussed by the group

Questions 1 and 2

Like most of the "new technologies", telematic links can be used usefully at different levels of an international educational exchange project and ensure the success of the project.

Several things should be taken into consideration:

- creation of a favourable "climate" through informing families and school administrations of the educational advantages to be gained from the use of this tool;

- constitution of interdisciplinary educative teams ensuring collective support for the experiment and helping the project leader whose training and technical and methodological in-service training should be ensured;

- help in the telematic undertaking through the preparation of pedagogical material before, during and after the experiment which should be very carefully planned but which could undergo changes in the process;

- availability of a "resource person" capable of supplying technical help to the experiment in order to make sure that the interactive communication is carried out rapidly ...

Question 4

The use of the new technologies, and school telematics in particular, should not be limited to a specific sector of teaching for the establishment and reinforcement of school links and international exchange projects.

The results of experiments carried out in the fields of higher education and adult education should be taken into consideration for their use in other levels of education.

Question 6

The use of electronic links to establish and improve communication between schools allows individual expression whilst respecting the code of conduct in the educational systems.

Questions 9 and 10

It would be useful to consider the preparation of a European charter promoting a policy of preferential costs for the establishment of telematic links for educational use.

PROPOSED RECOMMENDATIONS

1. At the colloquy on computerised school links, the participants invited the CDCC to undertake, from 1989, a new activity aimed at developing links between the learners and the teachers of the member countries in order to promote the development of intercultural learning through the new technologies.

They propose that in its initial phase (1989-1991), this new activity should aim at:

- setting up of a working group entrusted with the preparation of a VADEMECUM on electronic links between schools (or a draft proposal of contents is annexed);

- on the basis of criteria identified by the working group, the setting up of a system for the exchange of information which would take into account the results obtained in previous or similar Council of Europe programmes and activities in other organisations;

- reinforcement of the existing system of pupil and teacher exchanges, through more training in the field of the use of the new information and communication technologies.

2. The participants invite the CDCC to draw up a recommendation which would be transmitted to the Committee of Ministers and or the Parliamentary Assembly aimed at encouraging national bodies responsible for telecommunications to provide preferential rates for educational transmissions. In particular, a recommendation of this kind should mention electronic mail, the creation of networks of correspondents and data bases aimed at international educational projects.

These two recommendations are aimed at the abolition of linguistic and cultural borders in Europe and the acquisition of new technological and communication skills through educational activities at all levels of education and learning.

PROPOSALS FOR AN INFORMATION SYSTEM IN THE FORM OF v a d e m e c u m

1. Definitions:

- new technologies (cable, telephone, satellite, multimedia ...)

2. Institutions, bodies:

- official bodies: ministries, (education, research, communications, foreign affairs ...), international, regional, local bodies: Council of Europe, Unesco, OECD, Commission of the European Communities;

- associations (teachers' associations, the Freinet network, computer clubs ...)

- private bodies (not to be named, but in terms of their experiments)

3. How to begin:

- description of necessary hardware

- existing connections (ASCII and details of videotext per country and possible bridges)

- costs (installation, subscriptions, functioning and maintenance)

- methods (computer linked to a network, appropriate software to provide contact, lists of possible addresses (electronic mailboxes with particulars of schools, classes, pupils, languages and levels).

4. Evaluation:

- equipment (equipment adapted to needs)

- pedagogical aspect (to be studied further ...)
(Care should be taken in the evaluation of experiments which are still recent, advice should be given in order to avoid disappointments ...)

5. Description of one or several experiments as concrete encouragement (with full mention of the initiators in order to be able to contact them)

6. Glossary:

- explanatory with everyday terms;

- translation (in several languages)

7. Bibliography and references of all kinds

Means of publication of the VADEMECUM

- to be edited under the auspices of the Council of Europe with two objectives:

1. in printed form (short term)

2. European data base (to be updated regularly)

- to be published possibly with the first VADEMECUM ("traditional") already proposed at the end of 1988 beginning of 1989

- creation of a working party under the auspices of the Council of Europe in order to start work on this booklet.

WORKING GROUP 4

The members of Group 4 wish to take the opportunity to thank the Council of Europe and the Devon LEA for arranging the visits to the local schools. It was very pleasant meeting the teachers and seeing the children at work. The effort and organisation put into this was greatly appreciated and the evidence of the use of new technology itself was impressive.

Our group strongly supports the notion of improving international understanding through the application of IT and welcomes the examples of such practice from the projects reported upon. These projects highlighted the benefits which can come from the application of IT, when it is used in purposeful activities, and with relevant content and careful planning.

There is a great need for more innovation, development, research and evaluation.

There is a need for case studies on the various good practices which are in operation at present or which have been recently completed.

A major problem is the question of the long-term motivation of pupils and teachers after the initial enthusiasm has diminished. To sustain motivation there is a need for a good structure, a variety of supporting activities and a relevant and worthwhile content. Other problems include the pressures on teachers' time and the lack of practical and technical support.

E-mail should be seen as part of an overall system of linking including telephone, video, audio, photographs, fax and exchange of pupil materials in different media.

GENERAL RECOMMENDATIONS

1. A conference should be organised as a matter of urgency which will bring together practitioners and researchers to focus specifically on the classroom applications and strategies for the use of telecommunication in intercultural understanding.

2. A document should be produced describing examples of projects which place them within their social, cultural and pedagogical contexts and which identify the hallmarks of successful practice. This should be produced in an accessible form and disseminated widely.

3. Each country should identify, designate or set up a national or regional "centre" to act as a point of contact for information guidance and support.

4. A similar network connecting these "centres" should be established, initially at European level, to assist educational establishments to develop programmes and projects involving IT in international links.

5. All aspects of technical compatibility need to be sorted out as a matter of priority.

6. The Council of Europe and the European Community should collaborate as far as possible in providing resources to assist the further development of international initiatives in line with the theme of this colloquy.

7. The question of the costs of the communication systems to schools and other educational establishments needs to be considered at national and international level, in order to reduce them.

8. The implications for pre-service and in-service education of teachers are considerable and need to be addressed.

9. Funds should be made available to set up a limited number of pilot projects which focus upon issues of international understanding and in which the contribution of IT can be evaluated.

A P P E N D I X 2

1. Gateway Group

1.1 The group referred to in paragraph 7.5 met in Brussels on 19-20 November 1988 to continue discussions on ways of setting up and extending networks between schools. The group consisted of Eugene Geuns (Belgium), Peter Holbeck (Denmark), Soren Westerholm (Denmark), Guy Dockendorf (Luxembourg), Joao Freitas (Portugal), Elspeth Cardy (United Kingdom), Rosalind Steele (Switzerland) and Paddy Carpenter (consultant to European Commission).

1.2 Among subjects that were discussed was the possibility of creating an association to promote electronic links between schools and to provide a forum for discussion and the pooling of experience. The group also planned the compilation of a vademecum on the use of electronic mail and discussed the possibility of setting up a follow-up conference to Exeter.

1.3 The group decided to meet again with an expanded membership and, as this report goes to print, a meeting has been planned for the end of May 1989 in London.

2. Joint projects

The following are examples of messages sent out recently through electronic mail from Denmark and the Federal Republic of Germany calling for co-operation in carrying out joint projects between schools.

Message from a school in Denmark sent out through electronic mail

European elections

In connection with the elections for the European Parliament in June, students all over Europe will study the elections and the European dimension in the political life of their country. To give the students a sense of being part of a European event, they should have the possibility to work together with students from other countries on issues concerning the election.

The most obvious means of co-operation is electronic mail, which will enable students to communicate the results of their studies to students in other countries. Electronic mail is inexpensive and fast, and there are already several schools in Europe connected to mail systems.

Schools must be organised in "clusters" consisting of five to eight schools from different European countries. Each cluster can organise its own work, based on the ideas listed below.

Each school will probably analyse the European politics of its own country, and this information should be conveyed to the other schools. It will be a challenge for the students to have to explain to foreign students how their own country functions in this respect, and they will also learn from having to do it in a foreign language.

The schools can exchange information on the party structure and the electoral systems of their countries, and the voter attitudes to the European Community.

The students of a school can conduct a survey in several countries by sending a questionnaire to the other schools, asking them to do the survey and return the results. The schools might develop a joint survey. In the weeks before the elections, the students can produce daily or weekly bulletins on the campaign for the other schools. The students can set up several discussion groups on the issues of the election. After the election the students can compare and explain results, and analyse the composition of the new parliament.

Message from a school in Kiel, Federal Republic of Germany sent out through electronic mail

Ecological data on the North Sea and the Baltic Sea

We are looking for schools in the countries bordering the North Sea and the Baltic which would like to take part in this project.

Aim of the project: To collect ecologically relelvant data on the North Sea and the Baltic for use in schools and lessons. A database should be built up with access for telebox users and users of compatible systems.

Contributions needed:
1. Measurements which have been taken by pupils and measurements from other sources concerning the North Sea and the Baltic and also streams which flow into these seas.
2. Evaluations, reports and investigations in English or German. (Should the reports be based on interesting data, you are requested to send these data in too under 1, in anticipation of a future database).
3. Reports on methods of taking measurements which are suitable for use by schools.
4. Suggestions and challenges concerning how we have to behave if we wish to protect our seas.

Editorial deadline:
1. In order that we can gauge the interest for the planned project, you are requested to get in touch with us as soon as possible, preferably with information on your proposed topics.

   If the response is sufficiently good the results will subsequently be published every six months via TELEBOX.

3. Video recording of colloquy

A video recording was made of the Exeter colloquy and featured a number of keynote speakers and activities, and interviews with the pupils. Enquiries concerning the availability of copies of the video for use in teacher training etc should be addressed to the Education Department in Devon.

APPENDIX 3 / ANNEXE 3

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ORGANISATIONS INTERNATIONALES GOUVERNEMENTALES

United Nations Educational, Scientific and Cultural Organisation (Unesco)
Organisations des Nations Unies pour l'éducation, la science et la culture (UNESCO)

Apologies for absence/excusée

Organisation for Economic Co-operation and Development (OECD)
Organisation de cooperation et de developpement economiques (OCDE)

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Commission of the European Communities/Commission des Communautés Européennes

Apologies for absence/excusée

Organisation of Ibero-American States for Education, Science and Culture (OEI)/Organisation des Etats Ibéro-Américains pour l'Education, la Science et la Culture (OEI)

Apologies for absence/excusée

Commonwealth Secretariat

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Commonwealth Institute

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Organisation for African Unity/Organisation de l'Unité Africaine

Apologies for absence/excusée

NON GOVERNMENTAL INTERNATIONAL ORGANISATIONS
ORGANISATIONS INTERNATIONALES NON GOUVERNEMENTALES

World Federation of Modern Languages Associations (FIPLV)
Fédération Internationale des Professeurs de Langues Vivantes (FIPLV)

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International Federation of Organisations for School Correspondence and Exchanges (FIOCES)
Federation Internationale des Organisations de correspondences et d'echanges scolaires (FIOCES)

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SECRETARIAT DU CONSEIL DE L'EUROPE

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Direction de l'Enseignement, de la Culture et du Sport

School Education Division
Division de l'Enseignement Scolaire

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